REMARKS

Claims 1-18 and 20-22 are currently pending in the application. By this amendment, claim 19 is canceled, claims 1, 4, 7-9, 14 and 20 are amended and claims 21-22 are added for the Examiner's consideration. The above amendments do not add new matter to the application and are fully supported by the specification. For example, support for the amendment to claims 1 and 14 can be found at paragraph [0027] of the specification. Reconsideration of the rejected claims in view of the above amendments and the following remarks is respectfully requested.

35 U.S.C. §102(b) Rejections

Over Keller

Claims 1-3, 5-8 and 14-20 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,665,993 to KELLER et al. ("KELLER"). This rejection is respectfully traversed.

In order to establish a *prima facie* case of anticipation under 35 U.S.C. § 102, a single prior art reference must disclose each and every element as set forth in the subject claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). Applicants respectfully submit that a *prima facie* case of anticipation cannot be established because KELLER fails to teach each and every element of the claims.

In particular, independent claim 1 recites, *inter alia,*

> a guard ring that is one of disjointed, a non-closed loop, and missing a portion in at least one dimension; and
> at least one separation region bounding the active area.

Moreover, independent claim 14 recites, *inter alia,*

> forming a guard ring that is one of disjointed, a non-closed ring, and missing a portion in at least one dimension; and
> forming at least one separation region on the substrate where the at least one separation region is bounded on one side by the active area, wherein the at least one separation region reduces parasitic capacitance about the Schottky junction.

Applicants submit that KELLER does not disclose, or even suggest, at least these features.

Applicants acknowledge, for example, that KELLER discloses a Schottky diode having a bounding polysilicon layer 53 and oxide sidewalls 84 and 85 (see e.g., Fig. 2b and col. 6, lines 44-52). However, it is apparent from a fair reading of KELLER that it does not disclose, or even suggest, a guard ring that is one of disjointed, a non-closed loop, and missing a portion in at least one dimension in combination with at least one separation region bounding the active area. Nor does KELLER disclose, or even suggest, forming a guard ring that is one of disjointed, a non-closed ring, and missing a portion in at least one dimension in combination with forming at least one separation region on the substrate where the at least one separation region is bounded on one side by the active area, wherein the at least one separation region reduces parasitic capacitance about the Schottky junction. To the extent that the Examiner can properly argue that the oxide sidewalls 84, 85 constitute the recited separation regions, the Examiner has failed to identify any structure which would correspond to the recited guard ring, much less, one that is either disjointed, or a non-closed loop, or a guard ring that is missing a portion in at least one dimension as recited in at least claims 1 and 14.

Applicants submit that the use of one or more separation regions in combination with a guard ring that is either disjointed, or a non-closed loop, or a guard ring that is

missing a portion in at least one dimension provides benefits which are not disclosed or suggested by KELLER. Indeed, paragraph [0027] of the specification explains that this unique combination of features as allowing, for example, "the reduction or elimination of parasitic capacitance in the integrated circuit device."

Thus, Applicants respectfully submit that independent claims 1 and 14, and dependent claims 2, 3, 5-8 and 15-20 are allowable.

Accordingly, Applicants respectfully submit that the above-noted rejection under 35 U.S.C. § 102(b) should be withdrawn.

Over Krutsick

Claims 1, 3-6 and 8-13 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,066,884 to KRUTSICK ("KRUTSICK"). This rejection is respectfully traversed.

In order to establish a *prima facie* case of anticipation under 35 U.S.C. § 102, a single prior art reference must disclose each and every element as set forth in the subject claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). Applicants respectfully submit that a *prima facie* case of anticipation cannot be established because KRUTSICK fails to teach each and every element of the claims.

As noted above, independent claim 1 recites, *inter alia,*

> a guard ring that is one of disjointed, a non-closed loop, and missing a portion in at least one dimension; and
> at least one separation region bounding the active area.

Moreover, independent claim 9 recites, *inter alia,*

> an electrode formed on a surface of the semiconductor substrate in the active area to form a Schottky junction, wherein the at least one separation region reduces parasitic capacitance about the Schottky junction, and the at least one separation region is substantially formed in the active region to eliminate at least one portion of the guard ring at the portion where the at least one separation region is located.

Applicants submit that KRUTSICK does not disclose, or even suggest, at least these features.

Applicants acknowledge, for example, that KRUTSICK discloses various embodiments of a Schottky diode having an active region which is bounded by a guard ring 13, 75 (see e.g., Figs. 3-11). However, it is apparent from a fair review of each of Figs. 3, 5, 7 and 10 of KRUTSICK that the disclosed guard rings 13, 75 completely surround the active regions. As such, KRUTSICK cannot be said to disclose, or even suggest, a guard ring that is one of disjointed, a non-closed loop, and missing a portion in at least one dimension (claim 1). Nor has the Examiner identified any language in KRUTSICK which additionally discloses or suggests such a feature in combination with at least one separation region bounding the active area.

For similar reasons, KRUTSICK also cannot disclose or suggest that the at least one separation region is substantially formed in the active region to eliminate at least one portion of the guard ring at the portion where the at least one separation region is located (claim 9).

Nor does KRUTSICK disclose, or even suggest, forming a guard ring that is one of disjointed, a non-closed ring, and missing a portion in at least one dimension in combination with forming at least one separation region on the substrate, wherein the at least one separation region reduces parasitic capacitance about the Schottky junction.

To the extent that the Examiner can properly argue that the separation 77 constitutes the recited separation region (see Fig. 9 of KRUTSICK and col. 3, lines 48-53), the Examiner has failed to identify any disclosure which discloses or suggests that the disclosed guard ring 13, 75, can be one that is either disjointed, or a non-closed loop, or a guard ring that is missing a portion as recited in at least claims 1 and 9.

Again, as noted above, the use of one or more separation regions in combination with a guard ring that is either disjointed, or a non-closed loop, or a guard ring that is missing a portion provides benefits which are not disclosed or suggested by KRUTSICK, i.e., the benefits discussed on paragraph [0027] of the specification explaining that this unique combination of features "allows the reduction or elimination of parasitic capacitance in the integrated circuit device."

Thus, Applicants respectfully submit that independent claims 1 and 9, and dependent claims 3-6, 8 and 10-13 are allowable.

Accordingly, Applicants respectfully submit that the above-noted rejection under 35 U.S.C. § 102(b) should be withdrawn.

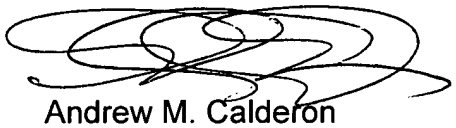
New Claims are also Allowable

Applicants submit that the new claims 21-22 are allowable over the applied art of record. Specifically, claims 21-22 depend from claim 14 which is believed to be allowable. Moreover, claims 21-22 recite a combination of features which are clearly not disclosed or suggested by the applied art of record. Accordingly, Applicants respectfully request consideration of these claims and further requests that the above-noted claims be indicated as being allowable.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to **IBM Deposit Account No. 09-0456** (Burlington).

Respectfully submitted,
Douglas. D. COOLBAUGH et al.



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